

Paul Corthals (a),(b) Language and gender effects in the Phonetics of Parentese

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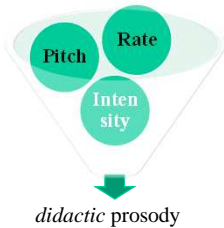
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INTRODUCTION

Parentese is the speech-language register adults switch to when talking to children. It uses a limited vocabulary, short repeated utterances, and referents that are concrete and present. Acoustic-phonetic analyses show hyper-articulated vowels, slower speech and articulation rate, raised voice pitch, exaggerated intonation, and pre-boundary vowel lengthening. Parentese probably regulates infant arousal and attention and communicates affect, but it is also thought to facilitate language learning because its linguistic complexity is tuned to children's language development stages and its segment-marking prosody can act as a disambiguating factor.



Interestingly, these features are also known to assist language-delayed children and second-language learners.



This study further documents the "didactic prosody" of child-directed speech in English and Dutch, and offers a male-female comparison of parentese speakers.

Research Questions

Is the prosody of Dutch and English parentese identical?
Are there male and female parentese sub-styles?

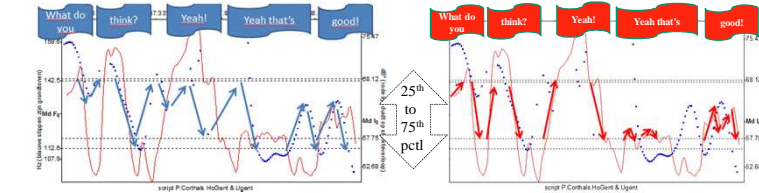
METHOD PARTICIPANTS & RECORDINGS

10 female and 7 male native speakers of Flemish Dutch and 9 female and 5 male native speakers of American English (i.e. 19 female and 12 male participants, mean ages 36 yrs. and 37 yrs.) were audio-recorded during dyadic sessions with their child and with one of the investigators. Children were typically developing (between 5 and 28 months; American children were younger). Digital recordings were made in each subject's home. For adult-to-adult samples, participants were encouraged to respond to unscripted questions. They were then asked to verbally interact with their child using a book or toy for the adult-to-child recordings.

METHOD PROCEDURES

Praat software (Boersma & Weenink 2009) was used to identify relevant fragments in the recordings. Praat scripts were used to retrieve parameters for:

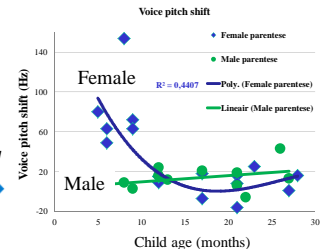
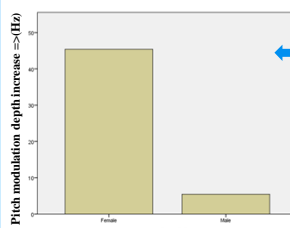
- Speech rate (words & syllables per unit of time)
- Voice pitch (median, extent and speed of the intonation maneuvers)
- Voice intensity (extent and speed of the voice stress maneuvers)



SIGNIFICANT EFFECTS

Gender effects

(left) In child-directed speech, female speakers exaggerate intonation (interquartile range of F_0) significantly more than males (T test $p < 0.001$). Voice pitch seems to be tuned to the child's age only in female parentese (right)

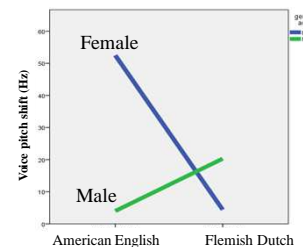
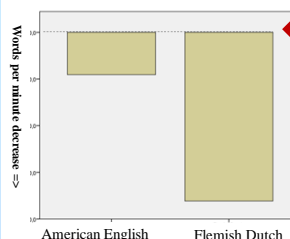


Language effect

Speech rate was reduced more in Flemish parentese (T test $p < 0.01$)

Language-Gender interaction

Female American English parentese speakers raised their voice pitch significantly more (2x2 ANOVA $p < 0.05$)



CONCLUSIONS

In both languages parentese has gender-specific features in that pitch modulations were significantly larger in female speakers. Moreover, median voice pitch seems to be tuned to the child's age in female parentese only. Lower speech rates in Flemish Dutch and the language-gender interaction (larger voice pitch shift in female speakers of American English) may be due to the younger age of the American children. When addressing young infants, voice pitch is an obvious feature to regulate arousal and to communicate affect, whereas a lower speech rate is better to convey information to older children, who begin to comprehend verbal messages.

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